

CLAIMS

What is Claimed is:

5 **Functionally Claimed Polymer:**

1. A composition comprising a triggerable cationic polymer,
wherein the polymer formulation is triggerable. *claim 1, 9*

2. A composition comprising a triggerable cationic polymer,
10 wherein the polymer formulation is insoluble in a neutral salt solution
containing greater than about 2 weight percent mono or multivalent ions and is
dispersible in water containing up to about 500 ppm of one or more
multivalent ions.

15 3. A composition comprising a triggerable cationic polymer,
wherein the polymer formulation is insoluble in a neutral salt solution
containing at least about 2 weight percent salt, said salt comprising one or
more monovalent ions; and wherein the polymer formulation is soluble in
water containing up to about 500 ppm of one or more multivalent ions.

20 4. A composition comprising a triggerable cationic polymer,
wherein the polymer formulation has wet strength in a neutral salt solution
containing at least about 2 weight percent salt, said salt comprising one or
more monovalent ions; and wherein the polymer formulation is dispersible in
25 hard or soft water.

5. A composition comprising a triggerable cationic polymer,
wherein the polymer formulation is insoluble in water that does not contain a
sufficient amount of a first triggering agent; and wherein the polymer
30 formulation is soluble in water containing a triggering amount or less of a
second triggering agent.

6. A binder composition for binding fibrous material into an integral web, said binder composition comprising the composition of Claim 1.

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7. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the composition of Claim 1.

8. A fibrous substrate comprising:
fibrous material; and
a binder composition for binding said fibrous material into an integral web, said binder composition comprising a triggerable cationic polymer.

9. A water-dispersible article comprising the fibrous substrate of Claim 8.

10. A wet wipe comprising:
a fibrous material;
a binder composition for binding said fibrous material into an integral web, said binder composition comprising a triggerable cationic polymer; and
said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

11. A method of making a wet wipe comprising:
forming a substrate of fibrous material;
applying to said substrate a binder composition for said fibrous material comprising a triggerable cationic polymer; and
applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

12. A method comprising:
applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a triggerable cationic polymer.

First Quaternary Polymer:

5 13. A polymer comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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10 14. The polymer of Claim 13, wherein said acrylic acid comprises approximately __ to __ weight percent, said butyl acrylate comprises approximately __ to __ weight percent, said 2-ethylhexyl acrylate comprises approximately __ to __ weight percent and said [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride comprises approximately __ to __ weight
15 percent of said quaternary polymer.

15 15. A binder composition for binding fibrous material into an integral web, said binder composition comprising the polymer of Claim 13.

20 16. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 13.

17. A fibrous substrate comprising:

fibrous material; and

25 a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

30 18. A water-dispersible article comprising the fibrous substrate of Claim 17.

19. A wet wipe comprising:

a fibrous material;

5 a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

10 said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

20. A method of making a wet wipe comprising:
forming a substrate of fibrous material;
applying to said substrate a binder composition for said fibrous
material comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-
ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium
chloride; and

applying to said substrate a wetting solution containing at least
about 2 weight percent salt, said salt comprising one or more monovalent ions.

21. A method comprising:
applying to a substrate of fibrous material;
a binder composition for said fibrous material comprising a quaternary
polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-
(methacryloyloxy)ethyl] trimethyl ammonium chloride.

Second Quaternary Polymer:

22. A polymer comprising a quaternary polymer of acrylamide,
butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl
ammonium chloride.

23. The polymer of Claim 22, wherein said acrylamide comprises
approximately __ to __ weight percent, said butyl acrylate comprises
approximately __ to __ weight percent, said 2-ethylhexyl acrylate comprises
approximately __ to __ weight percent and said [2-(methacryloyloxy)ethyl]
trimethyl ammonium chloride comprises approximately __ to __ weight
percent of said quaternary polymer.

24. A binder composition for binding fibrous material into an
integral web, said binder composition comprising the polymer of Claim 22.

25. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 22.

26. A fibrous substrate comprising:

fibrous material; and

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

27. A water-dispersible article comprising the fibrous substrate of Claim 26.

28. A wet wipe comprising:

a fibrous material;

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

29. A method of making a wet wipe comprising:

forming a substrate of fibrous material;

applying to said substrate a binder composition for said fibrous material comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

30. A method comprising:

applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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Terpolymer:

31. A polymer comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

32. The polymer of Claim 10, wherein said butyl acrylate comprises approximately __ to __ weight percent, said 2-ethylhexyl acrylate comprises approximately __ to __ weight percent and said [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride comprises approximately __ to __ weight percent of said terpolymer.

33. A binder composition for binding fibrous material into an integral web, said binder composition comprising the polymer of Claim 31.

34. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 31.

35. A fibrous substrate comprising:
fibrous material; and

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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36. A water-dispersible article comprising the fibrous substrate of Claim 35.

37. A wet wipe comprising:

a fibrous material;

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

38. A method of making a wet wipe comprising:

forming a substrate of fibrous material;

applying to said substrate a binder composition for said fibrous material comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

39. A method comprising:

applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.